# Basics

## What is Monolithic Architecture?

Monolithic architecture is like a big container in which all the software components of an application are clubbed inside a single package.

## What is microservice?

It is architectural style

* Microservices architecture splits large applications into (much) smaller pieces that exist independently of each other.
* the idea with microservices is to focus on building individual services that do one thing and one thing well.

## What are the advantages of microservices?

* Each component can be developed and deployed independently.
* As we are deploying smaller applications it will save deployment time.
* Fault isolation. In case of one process failure it should not bring whole system down.
* It works well with smaller and parallel teams.
* Each micro service can be developed with different technologies, so we are free to select technologies that suit the need.

## What are main differences between Microservices and Monolithic Architecture?

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| --- | --- |
| Microservices | Monolithic Architecture |
| Service Startup is fast | Service startup takes time |
| Microservices are loosely coupled architecture. | Monolithic architecture is mostly tightly coupled. |
| Changes done in a single data model does not affect other Microservices. | Any changes in the data model affect the entire database |
| Microservices focuses on products, not projects | Monolithic put emphasize over the whole project |

## What is the benefit of micro service in terms of scale? In bigger scale we have lots of load coming in, right? What is the benefit we get from micro service?

In case of micro services, we have smaller applications doing specific job so each application will be light weight so we can scale applications independently as per requirement for example. Some application we need 10 instances, and some can perform with only 5 instances.

Also, we can add new components to existing microservice architecture easily.

<https://www.xenonstack.com/insights/stateful-and-stateless-applications/>

## What is stateless architecture? **IMP**

A **Stateless** application or process is something that does not save or reference information about previous operations. Every time it carries each operation from the scratch just like the first time

For example, someone is searching a question in the search engine and pressed the Enter button. In case if the searching operation gets interrupted or closed due to some reason, you have to start a new one as there is no saved data for your previous request.

## What is stateful architecture? **IMP**

A **Stateful** **application** remembers specific details of a user like profile, preferences, and user actions. This information is considered as the ‘Status’ of a system.

For example, your shopping cart while using any website in Cloud. Each time you select an item and add it in your cart, you add it with the items added previously and eventually, you navigate to the checkout page.

## Give some of the examples of stateless and stateful applications?

## Which architecture cloud architects prefer? **IMP**

Stateless